

What is claimed is:

1. A suction-assisted tissue-engaging device adapted to be used in method of performing a medical procedure on a body organ, accessed through first and second incisions into a body cavity comprising:

an elongated shaft having a shaft body extending between a proximal shaft handle and a shaft body distal end, the shaft body adapted to be selectively inserted through the first incision to dispose the shaft body distal end within the body cavity or inserted through both the first and second incision to dispose the shaft body distal end outside the body adjacent the second incision while the shaft handle is disposed outside the body adjacent the first incision,

a suction head having a suction pad adapted to be coupled to a source of suction to engage the body organ through the application of suction to the body organ; and

a fastener comprising a shaft fastener element at the shaft body distal end and a suction head fastener element adapted to attach or detach the suction head to the shaft body distal end via the second incision.

2. The suction-assisted tissue-engaging device of Claim 1, further comprising:

a blunting element having a blunting element fastener element adapted to attach to the shaft fastener element to facilitate insertion of the shaft body into the body cavity and through the first and second incisions.

3. The suction-assisted tissue-engaging device of Claim 2, wherein:

the shaft body comprises a suction lumen extending from a suction fitting at the shaft handle adapted to be coupled to a vacuum source to a distal lumen end opening; and

the fastener couples the distal lumen end opening to the suction head to apply suction from the vacuum source through the suction lumen to tissue of the body organ contacted by the suction pad to engage the body organ.

4. The suction-assisted tissue-engaging device of Claim 1, wherein:
the shaft body comprises a suction lumen extending from a suction fitting at the shaft handle adapted to be coupled to a vacuum source to a distal lumen end opening; and

the fastener couples the distal lumen end opening to the suction head to apply suction from the vacuum source through the suction lumen to tissue of the body organ contacted by the suction pad to engage the body organ.

5. The suction-assisted tissue-engaging device of Claim 1, wherein the shaft fastener element extends through the shaft body from a shaft fastener proximal end at the shaft handle to a shaft fastener distal end, and the shaft fastener element is adapted to be moved into a disengage position to receive or release the suction head fastener element and into an engage position with the suction head fastener element fixedly attaching the suction head to the shaft body distal end.

6. The suction-assisted tissue-engaging device of Claim 5, wherein a distal exposed end of the shaft fastener element is blunted to present a blunt-tip across the shaft body distal end when the shaft body distal end is advanced through the first incision or the second incision and about the body cavity.

7. The suction-assisted tissue-engaging device of Claim 6, wherein:
the shaft body comprises a shaft lumen extending from the shaft handle to the shaft body distal end;

the shaft fastener element further comprises:

an elongated rod extending through the shaft lumen from a rod proximal end and a rod distal end;

a distal hook at the elongated rod distal end shaped to engage the suction head fastener element; and

a toggle mounted to the shaft handle and coupled to the rod proximal end adapted to move between a neutral position, a locked position and an advanced position, whereby

the suction head fastener element is adapted to be received by or released from the hook when the toggle is moved to the advanced position, to be engaged by the hook when the toggle is moved to the neutral position, and to be locked when the toggle is moved to the locked position.

8. The suction-assisted tissue-engaging device of Claim 7, wherein the suction pad comprises first and second suction pods supported by the suction head fastener element to extend substantially in parallel and spaced apart from one another to stabilize organ tissue between the first and second suction pods when suction is applied therethrough to the body organ to facilitate performing the medical procedure upon the body organ employing the second incision.

9. The suction-assisted tissue-engaging device of Claim 8, wherein the first and second suction pods are elongated, and each comprise at least one suction port adapted to be applied against the body organ and a suction nozzle extending toward the shaft body distal end adapted to be coupled to a vacuum line for application of suction to the body organ through the applied suction ports.

10. The suction-assisted tissue-engaging device of Claim 8, wherein the first and second suction pods are elongated, and each comprise at least one suction port adapted to be applied against the body organ and a suction nozzle extending away from the shaft body distal end adapted to be coupled to a vacuum line for application of suction to the body organ through the applied suction ports.

11. The suction-assisted tissue-engaging device of Claim 8, wherein:
the first and second suction pods are elongated, and each suction pod comprises at least one suction port adapted to be applied against the body organ;

a suction tube extends between the first and second suction ports supporting a suction nozzle adapted to be coupled to a vacuum line for application of suction to the body organ through the suction tube and the applied suction ports.

12. The suction-assisted tissue-engaging device of Claim 7, wherein the suction pad is shaped to conform anatomically to an area of the body organ to enable the body organ to be moved into and maintained in a non-physiologic position within the body cavity to facilitate performing the medical procedure upon the body organ employing the second incision.

13. The suction-assisted tissue-engaging device of Claim 1, wherein the suction pad comprises first and second suction pods supported by the suction head fastener element to extend substantially in parallel and spaced apart from one another to stabilize organ tissue between the first and second suction pods when suction is applied therethrough to the body organ to facilitate performing the medical procedure upon the body organ employing the second incision.

14. The suction-assisted tissue-engaging device of Claim 13, wherein the suction head further comprises a spreading mechanism that selectively spreads the first and second suction pods apart to stretch the organ tissue between the first and second suction pods when suction is applied therethrough to the organ tissue.

15. The suction-assisted tissue-engaging device of Claim 14, wherein:
the shaft body comprises a suction lumen extending from a suction fitting at the shaft handle adapted to be coupled to a vacuum source to a distal lumen end opening; and

the fastener couples the distal lumen end opening to the suction head to apply suction from the vacuum source through the suction lumen to organ tissue contacted by the suction pad to engage the body organ.

16. The suction-assisted tissue-engaging device of Claim 13, wherein:
the shaft body comprises a suction lumen extending from a suction fitting at the shaft handle adapted to be coupled to a vacuum source to a distal lumen end opening; and

the fastener couples the distal lumen end opening to the suction head to apply suction from the vacuum source through the suction lumen to organ tissue contacted by the suction pad to engage the body organ.

17. The suction-assisted tissue-engaging device of Claim 1, wherein the suction pad is shaped to conform anatomically to an area of the body organ to enable the body organ to be moved into and maintained in a non-physiologic position within the body cavity to facilitate performing the medical procedure upon the body organ employing the second incision.

18. A system for positioning or stabilizing a body organ to perform a medical procedure employing at least first and second incisions into a body cavity containing the body organ comprising:

a suction-assisted tissue-engaging device comprising:

an elongated shaft having an elongated shaft body extending between a proximal shaft handle and a shaft body distal end, the shaft body adapted to be selectively inserted through the first incision to dispose the shaft body distal end within the body cavity or inserted through both the first and second incision to dispose the shaft body distal end outside the body adjacent the second incision while the shaft handle is disposed outside the body adjacent the first incision,

a suction head having a suction pad adapted to be coupled to a source of suction to engage the body organ through the application of suction through suction ports to the body organ; and

a fastener comprising a shaft fastener element at the shaft body distal end and a suction head fastener element adapted to attach or detach the suction head to the shaft body distal end via the second incision; and

a support coupled between the elongated shaft and a fixed reference point with respect to the patient that orients and maintains the elongated shaft body at a particular operative vector in 3-D space relative to the patient's body while the medical procedure is conducted through the second incision or until it is necessary to change the operative vector.

19. The system of Claim 18, wherein the support further comprises an elongated, articulating, support arm having a flexible state and a rigid state having an arm distal end that can be attached to and detached from the elongated shaft and an arm proximal end that can be attached to and detached from a fixed reference point that is manipulable in the flexible state to orient the elongated shaft body at a particular operative vector in 3-D space relative to the patient's body and maintains the operative vector in the rigid state while the medical procedure is conducted through the second incision or until it is necessary to change the operative vector.

20. The system of Claim 19, wherein the fixed reference point is select from one of the frame of an operating table or a rigid rail attached to the operating table frame.

21. The system of Claim 18, wherein the suction-assisted tissue-engaging device further comprises a blunting element having a blunting element fastener element adapted to attach to the shaft fastener element to facilitate insertion of the shaft body into the body cavity and through the first and second incisions.

22. The system of Claim 18, wherein:
the shaft body comprises a suction lumen extending from a suction fitting at the shaft handle adapted to be coupled to a vacuum source to a distal lumen end opening; and

the fastener couples the distal lumen end opening to the suction head to apply suction from the vacuum source through the suction lumen to tissue of the body organ contacted by the suction pad to engage the body organ.

23. The system of Claim 18, wherein:

the shaft body comprises a suction lumen extending from a suction fitting at the shaft handle adapted to be coupled to a vacuum source to a distal lumen end opening; and

the fastener couples the distal lumen end opening to the suction head to apply suction from the vacuum source through the suction lumen to tissue of the body organ contacted by the suction pad to engage the body organ.

24. The system of Claim 18, wherein the shaft fastener element extends through the shaft body from a shaft fastener proximal end at the shaft handle to a shaft fastener distal end, and the shaft fastener element is adapted to be moved into a disengage position to receive or release the suction head fastener element and into an engage position with the suction head fastener element fixedly attaching the suction head to the shaft body distal end.

25. The system of Claim 24, wherein a distal exposed end of the shaft fastener element is blunted to present a blunt-tip across the shaft body distal end when the shaft fastener element is in the engage position and is advanced through the first incision or the second incision and about the body cavity.

26. The system of Claim 18, wherein:

the shaft body comprises a shaft lumen extending from the shaft handle to the shaft body distal end;

the shaft fastener element further comprises:

an elongated rod extending through the shaft lumen from a rod proximal end and a rod distal end;

a distal hook at the elongated rod distal end shaped to engage the suction head fastener element; and

a toggle mounted to the shaft handle and coupled to the rod proximal end adapted to move between a neutral position, a locked position and an advanced position, whereby

the suction head fastener element is adapted to be received by or released from the hook when the toggle is moved to the advanced position, to be engaged by the hook when the toggle is moved to the neutral position, and to be locked when the toggle is moved to the locked position.

27. The system of Claim 26, wherein the suction pad comprises first and second suction pods supported by the suction head fastener element to extend substantially in parallel and spaced apart from one another to stabilize organ tissue between the first and second suction pods when suction is applied therethrough to the body organ to facilitate performing the medical procedure upon the body organ employing the second incision.

28. The system of Claim 27, wherein the first and second suction pods are elongated, and each comprise at least one suction port adapted to be applied against the body organ and a suction nozzle extending toward the shaft body distal end adapted to be coupled to a vacuum line for application of suction to the body organ through the applied suction ports.

29. The system of Claim 27, wherein the first and second suction pods are elongated, and each comprise at least one suction port adapted to be applied against the body organ and a suction nozzle extending away from the shaft body distal end adapted to be coupled to a vacuum line for application of suction to the body organ through the applied suction ports.

30. The system of Claim 27, wherein:
the first and second suction pods are elongated, and each suction pod comprises at least one suction port adapted to be applied against the body organ;
a suction tube extends between the first and second suction ports, the suction tube supporting a suction nozzle adapted to be coupled to a vacuum line for application of suction to the body organ through the suction tube and the applied suction ports.
31. The system of Claim 27, wherein the suction pad is shaped to conform anatomically to an area of the body organ to enable the body organ to be moved into and maintained in a non-physiologic position within the body cavity to facilitate performing the medical procedure upon the body organ employing the second incision.
32. The system of Claim 18, wherein the suction pad comprises first and second suction pods supported by the suction head fastener element to extend substantially in parallel and spaced apart from one another to stabilize organ tissue between the first and second suction pods when suction is applied therethrough to the body organ to facilitate performing the medical procedure upon the body organ employing the second incision.
33. The system of Claim 32, wherein the suction head further comprises a spreading mechanism that selectively spreads the first and second suction pods apart to stretch the organ tissue between the first and second suction pods when suction is applied therethrough to the organ tissue.

34. The system of Claim 33, wherein:

the shaft body comprises a suction lumen extending from a suction fitting at the shaft handle adapted to be coupled to a vacuum source to a distal lumen end opening; and

the fastener couples the distal lumen end opening to the suction head to apply suction from the vacuum source through the suction lumen to organ tissue contacted by the suction pad to engage the body organ.

35. The system of Claim 32, wherein:

the shaft body comprises a suction lumen extending from a suction fitting at the shaft handle adapted to be coupled to a vacuum source to a distal lumen end opening; and

the fastener couples the distal lumen end opening to the suction head to apply suction from the vacuum source through the suction lumen to organ tissue contacted by the suction pad to engage the body organ.

36. The system of Claim 18, wherein the suction pad is shaped to conform anatomically to an area of the body organ to enable the body organ to be moved into and maintained in a non-physiologic position within the body cavity to facilitate performing the medical procedure upon the body organ employing the second incision.

37. A method of performing a medical procedure on a body organ, accessed through first and second incisions into a body cavity comprising:

providing a first portion, a second portion and a third portion of a suction-assisted tissue-engaging device;

coupling together the third portion of the suction-assisted tissue-engaging device to the first portion of the suction-assisted tissue-engaging device;

advancing the coupled together first and third portions of the suction-assisted tissue-engaging device through the first incision into the body cavity;

uncoupling the third portion of the suction-assisted tissue-engaging device from the first portion of the suction-assisted tissue-engaging device via the second incision;

coupling the second portion of the suction-assisted tissue-engaging device to the first portion of the suction-assisted tissue-engaging device via the second incision;

positioning the second portion of the suction-assisted tissue-engaging device against the body organ;

applying suction through the second portion of the suction-assisted tissue-engaging device to engage the body organ; and,

performing the medical procedure on the body organ via the second incision.

38. The method of Claim 37, further comprising upon completion of the medical procedure:

discontinuing application of suction;

repositioning the second portion of the suction-assisted tissue-engaging device from the body organ;

uncoupling the second portion of the suction-assisted tissue-engaging device from the first portion of the suction-assisted tissue-engaging device via the second incision; and

removing the first portion of the suction-assisted tissue-engaging device from the chest cavity through the first incision.

39. The method of Claim 38, further comprising coupling the third portion of the suction-assisted tissue-engaging device to the first portion of the suction-assisted tissue-engaging device via the second incision after uncoupling the second portion of the suction-assisted tissue-engaging device from the first portion of the suction-assisted tissue-engaging device via the second incision.

40. The method of Claim 39, wherein the positioning step further comprises:

orienting the first portion through the first incision into an operative vector in 3-D space for engagement of the second portion with the body organ; and
rigidly maintaining the operative vector to enable performance of the medical procedure on the body organ.

41. The method of Claim 38, wherein the positioning step further comprises:

orienting the first portion through the first incision into an operative vector in 3-D space for engagement of the second portion with the body organ; and
rigidly maintaining the operative vector to enable performance of the medical procedure on the body organ.

42. The method of Claim 37, wherein the positioning step further comprises:

orienting the first portion through the first incision into an operative vector in 3-D space for engagement of the second portion with the body organ; and
rigidly maintaining the operative vector to enable performance of the medical procedure on the body organ.

43. The method of Claim 37, wherein:

the advancing step further comprises advancing the coupled together first and third portions of the suction-assisted tissue-engaging device through the first incision into the body cavity and through the second incision to dispose the third portion outside the body; and

the uncoupling and coupling steps are performed outside the body.

44. The method of Claim 43, further comprising upon completion of the medical procedure:

- discontinuing application of suction;

- advancing the coupled together first and second portions of the suction-assisted tissue-engaging device through the second incision from the body cavity to dispose the second portion outside the body;

- uncoupling the second portion of the suction-assisted tissue-engaging device from the first portion of the suction-assisted tissue-engaging device outside the body; and

- removing the first portion of the suction-assisted tissue-engaging device from the chest cavity through the first incision.

45. The method of Claim 44, further comprising:

- coupling the third portion of the suction-assisted tissue-engaging device to the first portion of the suction-assisted tissue-engaging device outside the body after uncoupling the second portion of the suction-assisted tissue-engaging device from the first portion of the suction-assisted tissue-engaging device.

46. The method of Claim 45, wherein the positioning step further comprises:

- orienting the first portion through the first incision into an operative vector in 3-D space for engagement of the second portion with the body organ; and

- rigidly maintaining the operative vector to enable performance of the medical procedure on the body organ.

47. The method of Claim 44, wherein the positioning step further comprises:

- orienting the first portion through the first incision into an operative vector in 3-D space for engagement of the second portion with the body organ; and

- rigidly maintaining the operative vector to enable performance of the medical procedure on the body organ.

48. The method of Claim 43, wherein the positioning step further comprises:

orienting the first portion through the first incision into an operative vector in 3-D space for engagement of the second portion with the body organ; and
rigidly maintaining the first operative vector to enable performance of the medical procedure on the body organ.

49. The method of Claim 37, wherein:

the first portion comprises an elongated shaft having a shaft body extending between a proximal shaft handle and a shaft body distal end, the shaft body distal end supporting a shaft fastener element, shaft body adapted to be selectively inserted through the first incision to dispose the shaft body distal end within the body cavity or inserted through both the first and second incision to dispose the shaft body distal end outside the body adjacent the second incision while the shaft handle is disposed outside the body adjacent the first incision;

the second portion comprises a suction head having a suction pad adapted to be coupled to a source of suction to engage the body organ through the application of suction to the body organ and a suction head fastener element adapted to be attached to or detached from the shaft fastener element; and

the third portion comprises a blunting element having a blunting element fastener element adapted to attach to the shaft fastener element to facilitate insertion of the shaft body into the body cavity and through the first and second incisions.

50. A method of performing a medical procedure on a body organ, accessed through first and second incisions into a body cavity comprising:

providing an elongated shaft having a shaft body extending between a proximal shaft handle and a shaft body distal end, the shaft body distal end supporting a shaft fastener element,

providing a suction head having a suction pad adapted to be coupled to a source of suction to engage the body organ through the application of suction to the

body organ and a suction head fastener element adapted to be attached to or detached from the shaft fastener element;

advancing the elongated shaft through the first incision to dispose the shaft body distal end within the body cavity or inserted through both the first and second incision to dispose the shaft body distal end outside the body adjacent the second incision while the shaft handle is disposed outside the body adjacent the first incision;

attaching the suction head fastener element to the shaft fastener element to form a suction-assisted tissue-engaging device;

positioning the suction pad of the suction head against the body organ;
applying suction through the suction pad to engage the body organ; and,
performing the medical procedure on the body organ via the second incision.

51. The method of Claim 50, further comprising upon completion of the medical procedure:

discontinuing application of suction;
repositioning the suction pad of the suction head away from the body organ;
detaching the suction head fastener element from the shaft fastener element; and
removing the shaft body from the chest cavity through the first incision.

52. The method of Claim 51, further comprising
coupling a blunting element to the shaft body distal end prior to advancing the shaft body through the first incision; and
decoupling the blunting element from the shaft body distal end prior to attaching the suction head fastener element to the shaft fastener element.

53. The method of Claim 51 wherein the shaft fastener element is shaped to blunt the shaft body distal end during advancing the shaft body through the first incision.

54. The method of Claim 51, wherein the positioning step further comprises:

- orienting the shaft body through the first incision into an operative vector in 3-D space for engagement of the suction head with the body organ; and
- rigidly maintaining the operative vector to enable performance of the medical procedure on the body organ.

55. The method of Claim 50, wherein the positioning step further comprises:

- orienting the shaft body through the first incision into an operative vector in 3-D space for engagement of the suction head with the body organ; and
- rigidly maintaining the operative vector to enable performance of the medical procedure on the body organ.

56. The method of Claim 50, further comprising upon completion of the medical procedure:

- discontinuing application of suction;
- advancing the coupled together shaft body distal end and suction head of the suction-assisted tissue-engaging device through the second incision from the body cavity outside the body;
- detaching the suction head fastener element from the shaft fastener element; and
- removing the shaft body from the chest cavity through the first incision.

57. The method of Claim 56, further comprising coupling a blunting element to the shaft body distal end prior to removing the shaft body through the first incision.

58. The method of Claim 51, wherein:

- the shaft body comprises a shaft lumen extending from the shaft handle to the shaft body distal end;
- the shaft fastener element further comprises:
 - an elongated rod extending through the shaft lumen from a rod proximal end and a rod distal end;
 - a distal hook at the elongated rod distal end shaped to engage the suction head fastener element; and
 - a toggle mounted to the shaft handle and coupled to the rod proximal end adapted to move between a neutral position, a locked position and an advanced position;
- the advancing step comprises moving the toggle to the neutral position to dispose the distal hook substantially within the shaft body distal end
- the attaching step comprises moving the toggle to the advanced position to expose the hook, fitting the suction head fastener element into the hook, and moving the toggle to the locked position; and
- the detaching step comprises moving the toggle to the advanced position to expose the hook, removing the suction head fastener element from the hook, and moving the toggle to the neutral position.

59. The method of Claim 58, wherein the suction pad comprises first and second suction pods supported by the suction head fastener element to extend substantially in parallel and spaced apart from one another, and the suction applying step comprises applying suction through the suction pods to stabilize organ tissue between the first and second suction pods to facilitate performing the medical procedure upon the body organ employing the second incision.

60. The method of Claim 59, wherein the first and second suction pods are elongated, and each comprise at least one suction port adapted to be applied against the body organ and a suction nozzle extending toward the shaft body distal end, and the suction applying step comprises attaching vacuum lines to the suction nozzles for application of suction to the body organ through the applied suction ports.

61. The method of Claim 60, further comprising the step of extending the vacuum lines through the first incision.

62. The system of Claim 59, wherein the first and second suction pods are elongated, and each comprise at least one suction port adapted to be applied against the body organ and a suction nozzle extending away from the shaft body distal end, and the suction applying step comprises attaching vacuum lines to the suction nozzles for application of suction to the body organ through the applied suction ports.

63. The method of Claim 62, further comprising the step of extending the vacuum lines through the second incision.

64. The system of Claim 59, wherein:
the first and second suction pods are elongated, and each comprise at least one suction port adapted to be applied against the body organ; and
a suction tube extends between the first and second suction ports, the suction tube supporting a suction nozzle; and
the suction applying step comprises attaching a vacuum line to the suction nozzle for application of suction to the body organ through the applied suction ports.

65. The method of Claim 64, further comprising the step of extending the vacuum line through one of the first and second incision.

66. The method of Claim 58, wherein the suction pad is shaped to conform anatomically to an area of the body organ to enable the body organ to be moved into and maintained in a non-physiologic position within the body cavity to facilitate performing the medical procedure upon the body organ employing the second incision.

67. The method of Claim 51, wherein the suction pad is shaped to conform anatomically to an area of the body organ to enable the body organ to be moved into and maintained in a non-physiologic position within the body cavity to facilitate performing the medical procedure upon the body organ employing the second incision.

68. The method of Claim 51, wherein:
the suction pad comprises first and second suction pods supported by the suction head fastener element to extend substantially in parallel and spaced apart from one another;
the suction head comprises a spreading mechanism that selectively spreads the first and second suction pods apart; and
the suction applying step comprises:
applying suction through the suction pods to grasp the organ tissue; and
operating the spreading mechanism to spread the first and second suction pods apart to stretch the organ tissue between the first and second suction pods when suction is applied therethrough to the organ tissue to stabilize the organ tissue between the first and second suction pods to facilitate performing the medical procedure upon the body organ employing the second incision.

69. The method of Claim 51, wherein the suction pad comprises first and second suction pods supported by the suction head fastener element to extend substantially in parallel and spaced apart from one another, and the suction applying step comprises applying suction through the suction pods to stabilize

organ tissue between the first and second suction pods to facilitate performing the medical procedure upon the body organ employing the second incision.

70. The method of Claim 69, wherein the first and second suction pods are elongated, and each comprise at least one suction port adapted to be applied against the body organ and a suction nozzle extending toward the shaft body distal end, and the suction applying step comprises attaching vacuum lines to the suction nozzles for application of suction to the body organ through the applied suction ports.

71. The method of Claim 70, further comprising the step of extending the vacuum lines through the first incision.

72. The method of Claim 69, wherein the first and second suction pods are elongated, and each comprise at least one suction port adapted to be applied against the body organ and a suction nozzle extending away from the shaft body distal end, and the suction applying step comprises attaching vacuum lines to the suction nozzles for application of suction to the body organ through the applied suction ports.

73. The method of Claim 72, further comprising the step of extending the vacuum lines through the second incision.

74. The method of Claim 69, wherein:
the first and second suction pods are elongated, and each comprise at least one suction port adapted to be applied against the body organ; and
a suction tube extends between the first and second suction ports, the suction tube supporting a suction nozzle; and
the suction applying step comprises attaching a vacuum line to the suction nozzle for application of suction to the body organ through the applied suction ports.

75. The method of Claim 74, further comprising the step of extending the vacuum line through one of the first and second incision.

76. The method of Claim 51, wherein the shaft body comprises a suction lumen of the shaft body extending from a suction fitting at the shaft handle adapted to be coupled to a vacuum source to a distal lumen end opening, and the attaching step further comprises coupling the distal lumen end opening to the suction head to enable application of suction from the vacuum source through the suction lumen to tissue of the body organ contacted by the suction pad to engage the body organ.

77. The method of Claim 76, wherein:

the suction pad comprises first and second suction pods supported by the suction head fastener element to extend substantially in parallel and spaced apart from one another;

the suction head comprises a spreading mechanism that selectively spreads the first and second suction pods apart; and

the suction applying step comprises:

applying suction through the suction lumen and the suction pods to grasp the organ tissue; and

operating the spreading mechanism to spread the first and second suction pods apart to stretch the organ tissue between the first and second suction pods when suction is applied therethrough to the organ tissue to stabilize the organ tissue between the first and second suction pods to facilitate performing the medical procedure upon the body organ employing the second incision.

78. A method of performing a medical procedure on a body organ, accessed through first and second incisions into a body cavity comprising:

- providing a first portion and a second portion of a suction-assisted tissue-engaging device;
- advancing the first portion of the suction-assisted tissue-engaging device through the first incision into the body cavity and from the first incision through the second incision outside the body;
- coupling the second portion of the suction-assisted tissue-engaging device to the first portion of the suction-assisted tissue-engaging device outside the body;
- retracting the second portion through the second incision into the body cavity;
- positioning the second portion of the suction-assisted tissue-engaging device against the body organ;
- applying suction through the second portion of the suction-assisted tissue-engaging device to engage the body organ; and,
- performing the medical procedure on the body organ via the second incision.

79. The method of Claim 78, further comprising upon completion of the medical procedure:

- discontinuing application of suction;
- repositioning the second portion of the suction-assisted tissue-engaging device from the body organ through the second incision outside the body;
- uncoupling the second portion of the suction-assisted tissue-engaging device from the first portion of the suction-assisted tissue-engaging device via the second incision; and
- removing the first portion of the suction-assisted tissue-engaging device from the chest cavity through the first incision.

80. The method of Claim 79, wherein the positioning step further comprises:

orienting the first portion through the first incision into an operative vector in 3-D space for engagement of the second portion with the body organ; and rigidly maintaining the operative vector to enable performance of the medical procedure on the body organ.

81. The method of Claim 78, wherein the positioning step further comprises:

orienting the first portion through the first incision into an operative vector in 3-D space for engagement of the second portion with the body organ; and rigidly maintaining the operative vector to enable performance of the medical procedure on the body organ.

82. The method of Claim 78, wherein:

the first portion comprises an elongated shaft having a shaft body extending between a proximal shaft handle and a shaft body distal end, the shaft body distal end supporting a shaft fastener element, shaft body adapted to be selectively inserted through the first incision to dispose the shaft body distal end within the body cavity or inserted through both the first and second incision to dispose the shaft body distal end outside the body adjacent the second incision while the shaft handle is disposed outside the body adjacent the first incision; and

the second portion comprises a suction head having a suction pad adapted to be coupled to a source of suction to engage the body organ through the application of suction to the body organ and a suction head fastener element adapted to be attached to or detached from the shaft fastener element.